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11/3/00  
T.R.R.  
(RE)

Applicant: J. Carl Cooper

Examiner: Minsun Oh Harvey  
Art Unit: 2644

Serial No: 08/824,496

Filed : 03/14/97

For : Improved IFB System Apparatus and Method

Docket Number: JCC 396A

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November 2, 2000



RE: Office action of 10/12/00, paper # 13

ASSISTANT COMMISSIONER FOR PATENTS  
Washington, D.C. 20231

Via Fax (703) 308 6306

Dear Sir:

Reconsideration of the final rejections of all claims is respectfully requested for the reasons given below as well as for the reasons given in the previous responses.

1. Claims 8-17 and 28, 32-36 and 39 were rejected under 35 U.S.C. 112 first paragraph in respect to "Correlation circuit" used in those claims "do not read on figure 2". The examiner agrees that claim 1 is generic (page 14, line 9 of office action) and that when claim 1 becomes allowable, the dependent claims would be allowable. Claims 2 and 3 are also believed to be generic. It was noted that Figure 3 is improved with respect to Figure 2, i.e. it includes the same elements 12, 13, 14, etc, but adds element 15. Independent claim 1 recites common elements of Figures 2 and 3 and dependent claims 8-17 add the correlation feature (and others). The examiner has stated applicant's argument is not persuasive because Figures 2 and 3 are different embodiments. Applicant points out that a different embodiment may very well also be an improve-

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ment, as in the present instance where element 15 provides correlation and adjustment improvement to the embodiment of Figure 2.

In respect to claim 39, the examiner requested clarification with respect to pitch correction. As is well known in the art, variable delays may perform time compression or expansion of the delayed signals by changing the delay. In this instance the variable delay deals with audio signals which inherently have pitch, or frequency, characteristics which changes as the variable delay changes. For example, when an audio signal segment having a time duration of say 5 seconds is delayed, and that delay is changed from .1 to .2 seconds while the audio signal segment is being passed through the delay, the total time of the audio segment becomes 5.1 seconds  $[5 + (.2 - .1)]$ . As a consequence of this increase in time, the pitch of the audio signal is decreased during the time the delay is changing. In other words, the stored, or delayed audio is produced (read from the delay) at a slower speed than it is being stored (written into the delay). As taught in U.S. Patent 5,920,842 which was referenced in the instant specification, The '842 patent describes (column 1, lines 19-30) that when stored signals are produced at increased or decreased speeds (to decrease or increase the delay respectively) the stored signal undergoes a corresponding change in frequency, or pitch. The '842 patent goes on to teach how this change in frequency, or pitch, may be corrected. Note that claim 28 of the '842 patent deals specifically with changing the delay of an audio signal while correcting pitch artifacts which occur during the varying of the time period.

Kirby makes no suggestion of the pitch correction element of claim 39 this claim is believed allowable.

2, 3. Claims 1-52 were rejected under 35 U.S.C. 102(b) as being anticipated by Kirby. Applicant respectfully disagrees in that Kirby differs significantly and patentably from the claimed invention.

The examiner interprets Kirby's elements 22 and 32 as both performing variable delay of the talent signal. It is noted that Applicant's claimed invention does not need two variable delays for the talent signal. Kirby also utilizes variable delay 21 to delay the feedback signal 14. Applicant's claimed invention does not need this additional delay. Applicant's invention is simpler, and may be operated using only one variable delay rather than Kirby's 3, structurally and functionally different invention, either of which difference is believed patentable. These and other distinctions are brought out in the claims.

Previously amended claims 1-3 recite that the combining circuit (Kirby's 40) is responsive to the feedback signal (Kirby's 14) without further substantial variable delay. Kirby however further delays the feedback signal (14) in a variable delay (21). The examiner stated that when small changes in delay are detected, Kirby makes no compensation adjustment to delays 21 and 22 (bottom of page 14). Applicant points out however that the signal 14 is still delayed in a variable delay 21. The delay is still variable, whether it is continuously adjusted or intermittantly adjusted. The delay nevertheless imparts a further variable delay to the feedback signal 14. The Examiner has not shown how he interprets Kirby to meet the structure of the newly amended claim language which expressly prohibits the use of further variable delay of the feedback signal (the delay 21).

Claims 1, 5, 7 and 19 call for Operator adjustment of delay or gain. The examiner has pointed to adjustment caused by the mix minus signal being fed back to the filter 32 of Kirby, however the examiner has not pointed to where the operator causes the adjustment. One of ordinary skill in the art would understand the claim limitation of operator adjustment to refer to an adjustment by a person such as "the talent or other operator" of the device as described in the present specification, for example at the middle of page 14 of the disclosure. One of ordinary skill would not consider the adjustment caused by the mix minus signal to be operator adjustment as claimed, and the examiner has provided no indication of how Kirby's teachings would suggest

otherwise.

Claims 20-22 distinguish over Kirby. Claim 20 calls for varying the delay amount of the talent signal in continuing response to the variable delay of the feedback signal. Similarly claim 21 calls for continuing response and claim 22 calls for the delay amount being continuously responsive. In other words, the claims call for varying the delay in continuing response, rather than simply continually monitoring the delay of the feedback signal. The examiner states that delay measuring system 10 continuously monitors the incoming signal (bottom of page 4), and also points out that when small changes in delay are detected, the system makes no compensation adjustment to delays 21 and 22 (bottom of page 14). Because no adjustment of the delays 21 and 22 is made for small changes which are detected, Kirby clearly does not meet the varying the delay in continuing response language of claims 20-22. The examiner also states that the variable delay of Kirby is continuous - It could be continuous for 1 second or 1 minute or so on. The examiner's comment does not address the claim language however which calls for varying the delay in continuing response. This claim element is not the same as having a variable delay which is continuous as stated by the examiner.

Claims 5, 7, 19, 24, 26, 29 and 38 were objected to as being dependent upon rejected base claim. Claims 5/1, 7/1, 19/1, 24/20, 26/20, 29/20 and 38/20 were rewritten in independent form. The features of claims 5/2, 5/3, 7/2, 7/3, 19/2, 19/3, 24/20, 24/21, 26/20, 26/21, 29/20, 29/21, 38/20 and 38/21 have been rewritten as new independent claims 40-53. These claims contain elements such as operator adjustment in 5, 7 and 19 as explained above, delaying the talent signal a variable amount in response to the mix minus signal in 24, 26 and 29, and adjusting the level of the cancellation signal in response to the mix minus signal and talent signal in delayed form in 38.

For example, Claim 24 calls for delaying the talent signal by a varying delay amount in

response to the variable amount of delay. The examiner points to this delay being performed by Kirby's element 22 in response to 10. Claim 24 further calls for varying this delay amount in response the feedback signal. The examiner has not shown how the amount of delay 22 is responsive to the mix minus signal 34.

Claim 38 calls for adjusting the level of the cancellation signal (out of 38) in response to the mix minus signal (34) and talent signal in delayed form (out of 22). While the mix cancellation signal itself is responsive to the delayed talent signal, the examiner has now shown how the level is automatically adjusted in response to the talent signal. The level is automatically responsive only to the delayed mix minus signal via 36.

Specific features of claims 40-53 are missing from Kirby and the examiner has not shown where they are believed to be found. A specific example for each of these claims is set forth below.

In regard to claims 40-43, the examiner has not shown where the amount of delay of the talent signal (22) is responsive to the mix minus signal (34). If the examiner believes 22 delays the talent signal, there is no connection to the mix minus signal.

Claims 44 & 45 call for adjusting the gain of the cancellation signal (out of 38) in response to the mix minus signal (34) and talent signal in delayed form (out of 22). While the mix cancellation signal itself is responsive to the delayed talent signal, the examiner has now shown how the gain is automatically adjusted in response to the talent signal. The gain is automatically responsive only to the delayed mix minus signal via 36.

Claims 46-49 call for the varying delay amount (22) of the talent signal to be responsive to the mix minus signal.

Claims 50 & 51 call for one of the varying delay amount (22) or adjusting of the level (32) of the talent signal to be responsive to the mix minus signal (34) and talent signal in unde-

layed form (12).

Claims 52 & 53 call for adjusting the level of the talent signal (at 32) with the adjustment automatically in response to the mix minus signal (34) and the talent signal in delayed form (out of 22).

As set forth above, reconsideration and allowance of claims 1-53 is respectfully solicited.

Respectfully submitted,

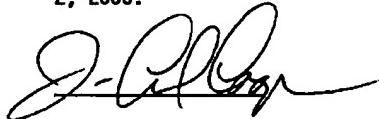


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after final response to 10/12/00 office action in appn. S/N 08/824,496

TOTAL P.07

## \* \* \* \* OUTGOING FAX \* \* \* \*

COMPANY: U.S. Patent and Trademark Office DATE: 11/ 2/00

TO: Art Unit 2644  
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FROM: J. CARL COOPER, 34,568

Number of pages  
including this cover: 7

RE: response in 08/824,496

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Please promptly enter the enclosed response.